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# Missouri House of Representatives



*Interim Committee Report  
on  
The Use of Jet Boats & Canoes  
on Missouri Streams*

*November, 1986*


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## INTRODUCTION

THE COMMITTEE ON JET BOATS AND CANOES WOULD LIKE TO COMMEND THE SPEAKER OF THE MISSOURI HOUSE OF REPRESENTATIVES FOR APPOINTING THIS COMMITTEE TO STUDY THIS CONTROVERSIAL ISSUE OF JET BOATS AND CANOES ON SMALL RIVERS AND STREAMS OF THIS STATE.

THE COMMITTEE CONDUCTED HEARINGS ON:

AUGUST 18	ST. LOUIS - UMSL	7:00 P.M.
AUGUST 19	SULLIVAN - MERAMEC STATE PARK	7:00 P.M.
SEPTEMBER 2	JEFFERSON CITY - STATE CAPITOL	7:00 P.M.
SEPTEMBER 30	VAN BUREN	7:00 P.M.

THIS ISSUE WAS ONE THAT INTERESTED QUITE A NUMBER OF PEOPLE AND SPARKED A LOT OF PARTICIPATION BY INTERESTED PEOPLE. THE COMMITTEE HAD AN ATTENDANCE OF APPROXIMATELY 100 AT ST. LOUIS; 400 TO 500 AT SULLIVAN; 75 TO 100 AT JEFFERSON CITY AND 600 TO 700 PEOPLE AT VAN BUREN.

MISSOURI IS A STATE BLESSED WITH VAST WATER RESOURCES IN THE FORM OF LAKES, RIVERS AND CLEAR-WATER STREAMS. THERE ARE APPROXIMATELY 4,350 MILES OF SHORELINE AND 265,081 ACRES OF WATER IN MISSOURI LAKES. THE MISSISSIPPI RIVER HAS APPROXIMATELY 500 MILES OF SHORELINE WITH 203,000 ACRES AND THE MISSOURI RIVER HAS 550 MILES OF SHORELINE WITH APPROXIMATELY 61,000 ACRES. THE REMAINING RIVERS AND STREAMS HAVE APPROXIMATELY 10,000 MILES OF SHORELINE WITH 97,000 ACRES OF WATER BETWEEN SHORELINES.

THE STATE OF MISSOURI HAS BECOME THE RECREATION CENTER OF THE MIDWEST AND THE DEPARTMENT OF REVENUE IN DECEMBER, 1985

REPORTED 277,282 REGISTERED BOATS IN MISSOURI. IN ADDITION TO MISSOURI BOATERS IT IS ESTIMATED THAT THERE ARE 30,000 OUT OF STATE BOATERS ENJOYING MISSOURI WATERS ON ANY TYPICAL SUMMER WEEKEND.

THE EXCELLENT RESOURCES IN AND ALONG THE RIVERWAYS ALLOW MISSOURIANS AND VISITORS TO PARTICIPATE IN A WIDE RANGE OF RECREATION ACTIVITIES INCLUDING BOATING, CANOEING, TUBING, SWIMMING, FISHING, CAMPING AND NUMEROUS OTHER ACTIVITIES.

MORE AND MORE PEOPLE EVERY YEAR USE MISSOURI'S EXCELLENT WATER RESOURCES.

WITH MORE AND MORE ACTIVITIES ESPECIALLY ON OUR RIVERS AND STREAMS WE ARE FINDING INCREASED CONGESTION. THE COMMITTEE HEARD THAT IN THE PAST TEN TO TWENTY YEARS THAT EVERY CATEGORY OF USER (CANOES, MOTOR BOAT, TUBE, RAFT, AND JET BOAT OPERATORS) HAS INCREASED CONSIDERABLY. THE CANOES AND JET BOAT POPULATION HAS PROBABLY INCREASED MORE THAN ANY OTHER USER ALONG MISSOURI'S SMALL RIVERS AND STREAMS.

## PUBLIC COMMENTS

THROUGH THE HEARING PROCESS THE COMMITTEE HEARD THERE ARE NUMEROUS PROBLEMS FACING RIVER USERS AROUND THE STATE. THE MOST CONTROVERSIAL PROBLEM TODAY IS THE PROBLEM OF JET BOATS AND CANOES.

CANOEISTS FEEL JET BOATS ARE INAPPROPRIATE AND DANGEROUS ON LOW WATER STREAMS AND RIVERS. MANY OF THE CANOEISTS AND ENVIRONMENTALISTS EXPRESSED THEIR CONCERN ABOUT THE ENVIRONMENTAL IMPACT JET BOATS MAY HAVE ON AQUATIC LIFE, RIVER BEDS AND SHORES. THE COMMITTEE ALSO HEARD COMPLAINTS THAT JET BOATERS ARE INCONSIDERATE AND COME UP STREAMS AND RIVERS AT HIGH SPEEDS, GET CLOSE TO CANOES AND CAUSE PROBLEMS WITH THEIR WAKE.

CANOEISTS INDICATED THEY FEEL A STRONG NEED FOR MORE LAW ENFORCEMENT ALONG THE RIVERS OF THIS STATE TO HELP CONTROL PROBLEMS WITH JET BOATS, TO HELP CONTROL THEIR OWN RANKS, AND TO DEAL WITH OTHER PROBLEMS.

MANY PEOPLE FELT JET BOATS ARE NOISY AND INTRUDE ON THEIR PEACEFUL AND TRANQUIL SETTING.

JET BOATERS ON THE OTHER HAND SAY THEY HAVE JUST AS MUCH RIGHT TO THE RIVERS AND STREAMS AS ANY OTHER WATERCRAFT.

JET BOATERS CONTEND THAT MANY TIMES CANOEISTS ARE NOT COURTEOUS AND TIE LARGE NUMBERS OF CANOES TOGETHER WHILE FLOATING, THUS BLOCKING THE CHANNEL TO ONCOMING WATERCRAFT.

THEY INDICATED THAT PROFANITY AND NUDITY AMONG CANOEISTS

IS SO BAD THAT MANY FAMILIES CANNOT ENJOY THE WATERS ANYMORE.

MANY OF THE JET BOATERS TOLD THE COMMITTEE THEY ARE FISHERMEN AND THEY JUST TRY TO GET FROM ONE POINT TO ANOTHER POINT IN THE SAFEST POSSIBLE WAY. THEY ALSO CONTEND THAT CANOEISTS ARE POLLUTING THE RIVERS BY DUMPING THEIR TRASH INTO THE RIVER AND LEAVING IT ALONG THE SHORELINES.

JET BOATERS ALSO EMPHASIZED THE NEED FOR INCREASED LAW ENFORCEMENT ALONG THE WATER WAYS OF THE STATE.

JET BOAT OPERATORS STATED THEY PAY MORE THAN THEIR FAIR SHARE TO OPERATE ON MISSOURI'S WATER, WHEREAS CANOEISTS DO NOT PAY ANYTHING.

THE COMMITTEE ALSO HEARD FROM BOTH CANOEISTS AND JET BOATERS OF OTHER PROBLEMS FACING RIVER AND STREAM USERS.

LANDOWNERS ALONG WITH THE BOAT OPERATORS, CANOEISTS, AND ENVIRONMENTALIST ARE VERY CONCERNED ABOUT THE INCREASING SANITATION CONDITIONS AND LITTERING PROBLEMS ALONG THE RIVERS AND STREAMS. SEVERAL PEOPLE TESTIFYING BEFORE THE COMMITTEE BELIEVE THE HUMAN WASTE PROBLEMS ARE RELATED TO CANOEISTS RELIEVING THEMSELVES ON RIVER BANKS AND GRAVEL BARS. THEY ALSO BELIEVE CONSTRUCTING REST STOPS ALONG THE RIVERS AND EDUCATING THE PUBLIC ON PROPER DISPOSAL METHODS WILL HELP SOLVE THIS PROBLEM.

LANDOWNERS ALONG THE RIVERS AND STREAMS COMPLAINED OF RIVER USERS TRESPASSING. THEY WOULD LIKE TO SEE MORE STRICT ENFORCEMENT OF THE STATE'S TRESPASSING LAWS. THEY BELIEVE THIS WILL SOLVE MUCH OF THEIR SANITATION AND LITTER PROBLEMS.

THE COMMITTEE ENCOUNTERED NUMEROUS COMPLAINTS BY RIVER

USERS OF THE USE OF ALL-TERRAIN VEHICLES AND 4-WHEEL DRIVE VEHICLES ALONG RIVER BANKS AND IN THE RIVERS. MANY BOATERS AND FISHERMEN BELIEVE SUCH ACTIVITY IS THE LEADING CONTRIBUTOR TO FURTHER EROSION AND DESTRUCTION OF RIVER BANKS AND BASIC FISH HABITAT AND ENVIRONMENT.

## COMMITTEE OBSERVATIONS AND CONCLUSIONS

THE COMMITTEE AFTER CAREFUL STUDY AND OBSERVATION, ACKNOWLEDGES THAT THERE IS A PROBLEM ALONG SOME OF THE RIVERWAYS OF MISSOURI.

THE PROBLEM LIES IN THE FACT THAT MISSOURI RIVERS AND STREAMS ARE MORE THAN JUST WATER, THEY ARE HIGHWAYS COMBINING WATER AND SCENIC APPEAL FOR FUN AND ADVENTURE, WHETHER THEY ARE CLEAR AND INVITING STREAMS FLOWING SWIFTLY OVER GRAVEL BARS AND AROUND MAMMOTH BLUFFS OR SLOW-MOVING AND TRANQUIL STREAMS FLOWING PEACEFULLY THROUGH VALLEYS AND LOW ROLLING HILLS. SUCH BREATHTAKING RIVERS AND STREAMS HAVE LURED PEOPLE FROM ALL OVER THE COUNTRY TO SEE SOME OF NATURE'S PERFECTION. MORE AND MORE PEOPLE VISITING SUCH RIVERS AND STREAMS BRING THE PROBLEM OF CONGESTION.

IT IS APPARENT THAT WITH MORE AND MORE PEOPLE FROM VARIOUS BACKGROUNDS, GEOGRAPHICAL AREAS AND VIEWPOINTS ON THE RIVERS THAT THEY WILL DISAGREE AS TO HOW RIVERS AND STREAMS SHOULD AND COULD BE USED.

HOWEVER, THE COMMITTEE FELT THAT MOST OF THE PROBLEMS ON OUR RIVERS AND STREAMS COULD BE SOLVED IF USERS WOULD JUST USE COMMON SENSE AND COURTESY TOWARD THEIR FELLOW USERS. THIS IS SOMETHING WE AS A COMMITTEE FEEL CANNOT AND SHOULD NOT BE LEGISLATED.

THE COMMITTEE HEARD THAT JET BOATS ARE NOISY, RUN AT HIGH SPEEDS AND ARE DANGEROUS.

THE COMMITTEE MEMBERS HAD THE OPPORTUNITY TO RIDE IN VARIOUS SIZES OF JET BOATS AND OBSERVE THEIR OPERATION.

THE COMMITTEE MEMBERS FOUND THAT JET BOAT NOISE LEVEL IS NOT MUCH MORE THAN CONVENTIONAL PROPELLER DRIVEN BOATS THAT HAVE SHARED THESE WATERWAYS FOR DECADES.

THE COMMITTEE MEMBERS HAVE LEARNED THAT MANUFACTURERS ARE IN TUNE WITH THE PUBLIC CRY. THE MERCURY CORPORATION FOR EXAMPLE IS DESIGNING A NEW MUFFLER SYSTEM THAT WILL MAKE JET BOATS MUCH QUIETER THAN THE PRESENT ENGINES.

THERE SEEMS TO BE A MISCONCEPTION OF WHAT A JET BOAT IS AND THE SPEED ASSOCIATED WITH SUCH A BOAT. FIRST OF ALL, THE TYPICAL JET BOAT IS A BASS BOAT CONFIGURATION WITH A FISHING PLATFORM, A STEERING CONSOLE, FRONT MOUNTED TROLLING MOTOR, TWO WELLS AND USUALLY WITH AN OUTBOARD ENGINE. THE BOAT BASICALLY IS A BOAT DESIGNED FOR FISHING. THE ENGINE IS A REGULAR OUTBOARD WITH THE EXCEPTION OF THE LOWER UNIT WHICH HAS A PUMP TYPE SYSTEM INSTEAD OF THE CONVENTIONAL PROPELLER SYSTEM. (SEE APPENDIX A).

NEWTON'S THIRD LAW, "FOR EVERY FORCE THERE IS AN EQUAL AND OPPOSITE FORCE OF REACTION," EXPLAINS THE PRINCIPLE UPON WHICH THE OUTBOARD JET IS BASED.

WATER IS DRAWN INTO THE UNIT THROUGH AN INTAKE GRILL BY AN IMPELLER DRIVEN DIRECTLY BY THE ENGINE DRIVESHAFT. THIS WATER IS THEN FORCED AT HIGH PRESSURE AND VOLUME THROUGH A NOZZLE DIRECTED ASTERN OF THE BOAT. THE VELOCITY IMPARTED TO THIS MASS OF WATER CREATES AN OPPOSITE FORCE, ACCORDING TO NEWTON'S LAW

AND DRIVES THE BOAT FORWARD. WHEN THE BOAT REACHES PLANING SPEED, THE JET DISCHARGES FREELY INTO THE AIR AND ONLY THE SKIMMING INTAKE GRILL TOUCHES THE WATER. TO REVERSE, A CUP IS SWUNG INTO POSITION OVER THE JET STREAM DIRECTING IT IN THE OPPOSITE DIRECTION CREATING A FORCE TO PROPEL THE BOAT BACKWARDS. CONVENTIONAL CONTROLS ARE USED FOR THROTTLE, REVERSE, AND STEERING. (SEE APPENDIX B).

MOST JET UNITS EXPERIENCE APPROXIMATELY A 30% DECREASE IN POWER. FROM THE TESTIMONY TAKEN THE COMMITTEE BELIEVES THE AVERAGE MAXIMUM HORSEPOWER OF THE AVERAGE JET BOAT PRODUCES MAXIMUM SPEEDS OF 25 TO 45 MILES PER HOUR.

THE COMMITTEE STUDIED BOATING ACCIDENT RECORDS ON FLAT STREAMS AND FOUND THAT JET BOATS HAVE THE BEST ACCIDENT RECORD OF ALL OTHER WATERCRAFT IN THE STATE. (SEE APPENDIX C-1 AND C-2). THERE HAS NOT BEEN A SINGLE FATALITY OR MAJOR INJURY REPORTED IN THE STATE RELATING TO JET BOATS.

THE COMMITTEE RECEIVED PETITIONS WITH 1392 SIGNATURES FROM INTERESTED JET BOATERS ASKING THAT NO RESTRICTION BE PLACED ON JET BOAT USERS.

THE COMMITTEE MEMBERS ALSO OBSERVED THAT ALL ACROSS THE STATE THE NUMBER ONE CONCERN OF CANOEISTS, BOATERS, LANDOWNERS, AND CAMPERS IS THAT OUR RIVERS AND STREAMS NEED MORE LAW ENFORCEMENT.

MOST OF THE PROBLEMS REPORTED WERE THOSE SUCH AS SPEEDING

JET BOATERS, CANOEISTS BLOCKING THE RIVER CHANNEL, NUDITY, TRASHING THE RIVERS AND TRESPASSING. THE COMMITTEE MEMBERS BELIEVE THESE PROBLEMS CAN BE SOLVED WITH INCREASED LAW ENFORCEMENT. THERE ARE LAWS PRESENTLY ON THE BOOKS TO TAKE CARE OF SUCH PROBLEMS.

THE COMMITTEE MEMBERS ALSO RECOGNIZE THE NEED TO INCREASE BOATING SAFETY AND BOATING OPERATION COURSES.

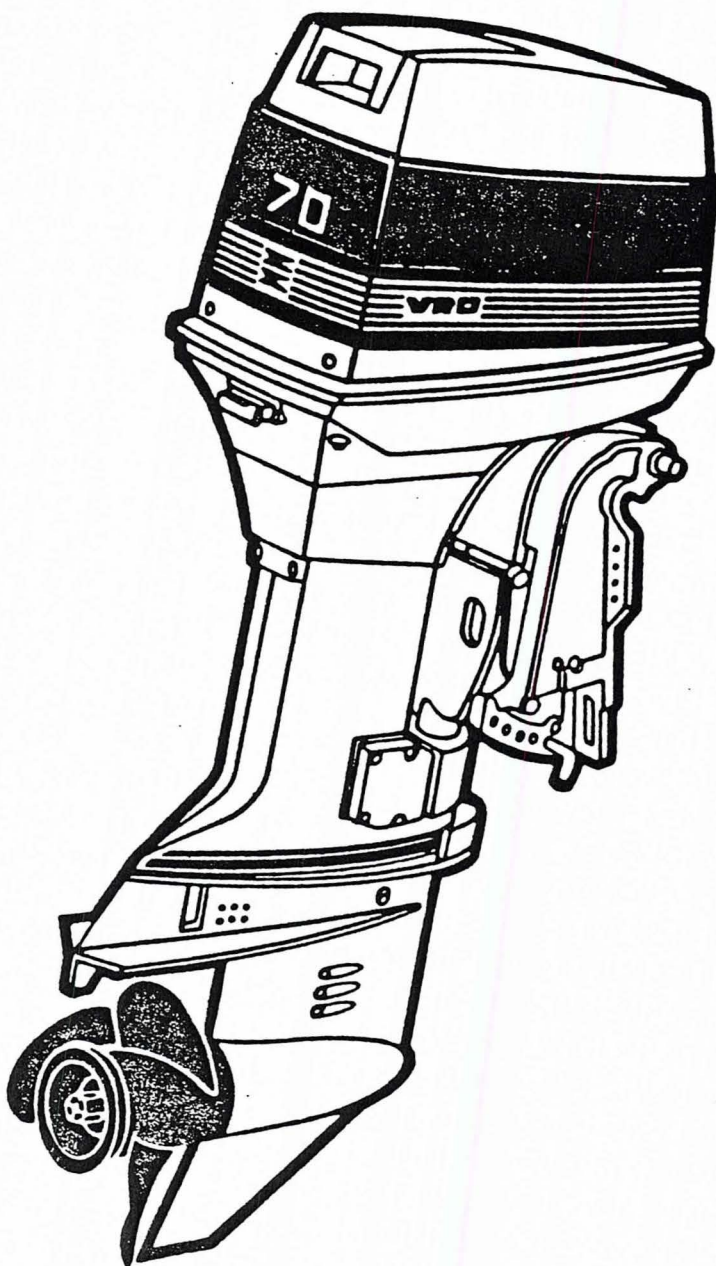
RECOMMENDATIONS

1. THE COMMITTEE SEES A STRONG NEED TO INCREASE WATER PATROL ALONG MISSOURI RIVERS AND STREAMS. THE COMMITTEE RECOMMENDS TO THE SPEAKER AND THE APPROPRIATIONS COMMITTEE THAT ADDITIONAL WATER PATROL OFFICERS BE PLACED WITH THE DIVISION OF WATER PATROL. THE COMMITTEE BELIEVES EACH FLOATING RIVER AND STREAM NEEDS AT LEAST ONE ADDITIONAL OFFICER TO PATROL ITS WATERS.
2. AT THIS TIME THE COMMITTEE IS NOT RECOMMENDING ANY RESTRICTIONS ON THE USE OF JET BOATS OR CANOES ON ANY OF MISSOURI'S RIVERS AND STREAMS.
3. THE COMMITTEE RECOMMENDS TO THE MISSOURI CONSERVATION COMMISSION THAT AN ENVIRONMENTAL IMPACT STUDY BE DONE RELATING TO VARIOUS USAGE OF SMALL STREAMS AND RIVERS TO DETERMINE IF ANY DAMAGE IS BEING DONE TO THE AQUATIC LIFE.
4. THE COMMITTEE HEARD NUMEROUS COMMENTS RELATING TO REGISTERING CANOES. THE COMMITTEE MEMBERS FEEL FURTHER STUDY IS NEEDED BEFORE PROCEEDING TO REGISTER CANOES.
5. THE COMMITTEE RECOMMENDS THE MISSOURI STATE WATER PATROL MAKE A CONCENTRATED ENFORCEMENT EFFORT ON VARIOUS RIVERS AND STREAMS DURING SUMMER MONTHS. THE MISSOURI STATE HIGHWAY PATROL HAS DONE THIS ON THE HIGHWAYS ON MAJOR HOLIDAYS AND IT HAS BEEN VERY EFFECTIVE. THE COMMITTEE FEELS THIS SIMILAR TYPE OF SATURATED ENFORCEMENT ON CERTAIN WATER WAYS CAN BE EQUALLY EFFECTIVE.

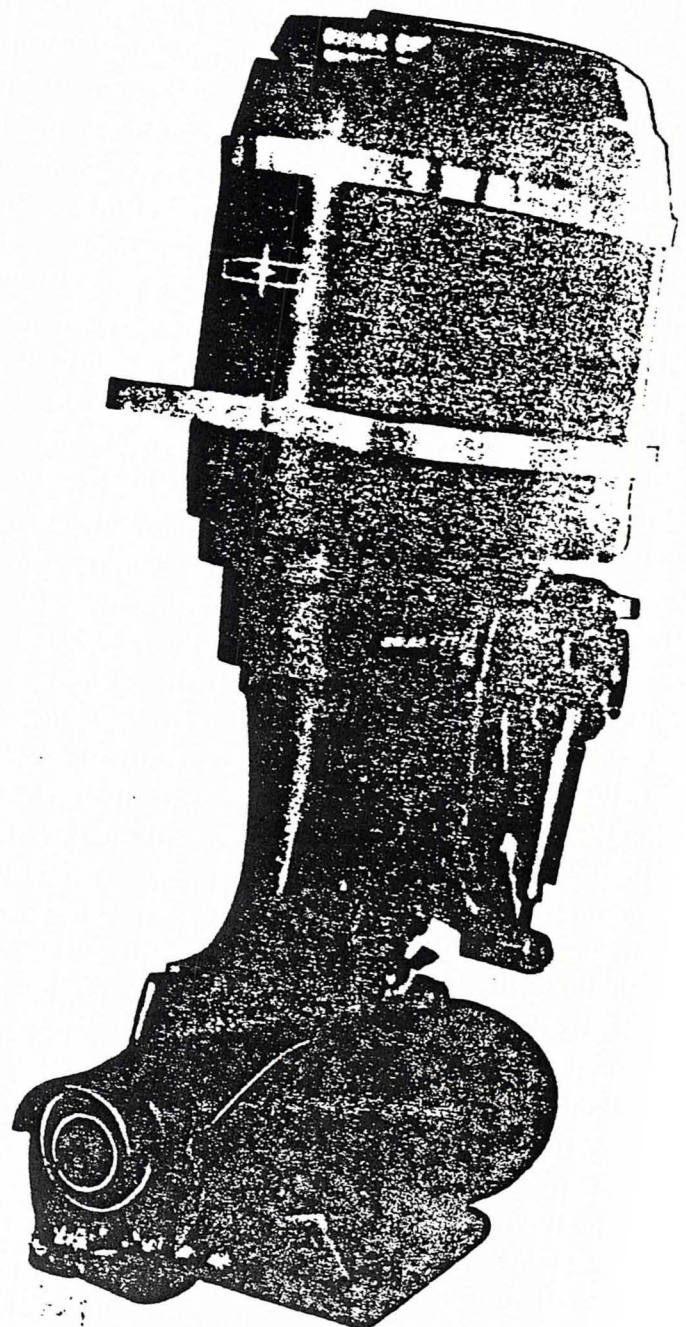
6. THE COMMITTEE WOULD LIKE TO ENCOURAGE THE MISSOURI STATE WATER PATROL TO NOT ONLY CONTINUE BUT TO INCREASE WATER SAFETY AND TRAINING PROGRAMS DURING THE OFF-SEASON WINTER MONTHS.
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APPENDIX A

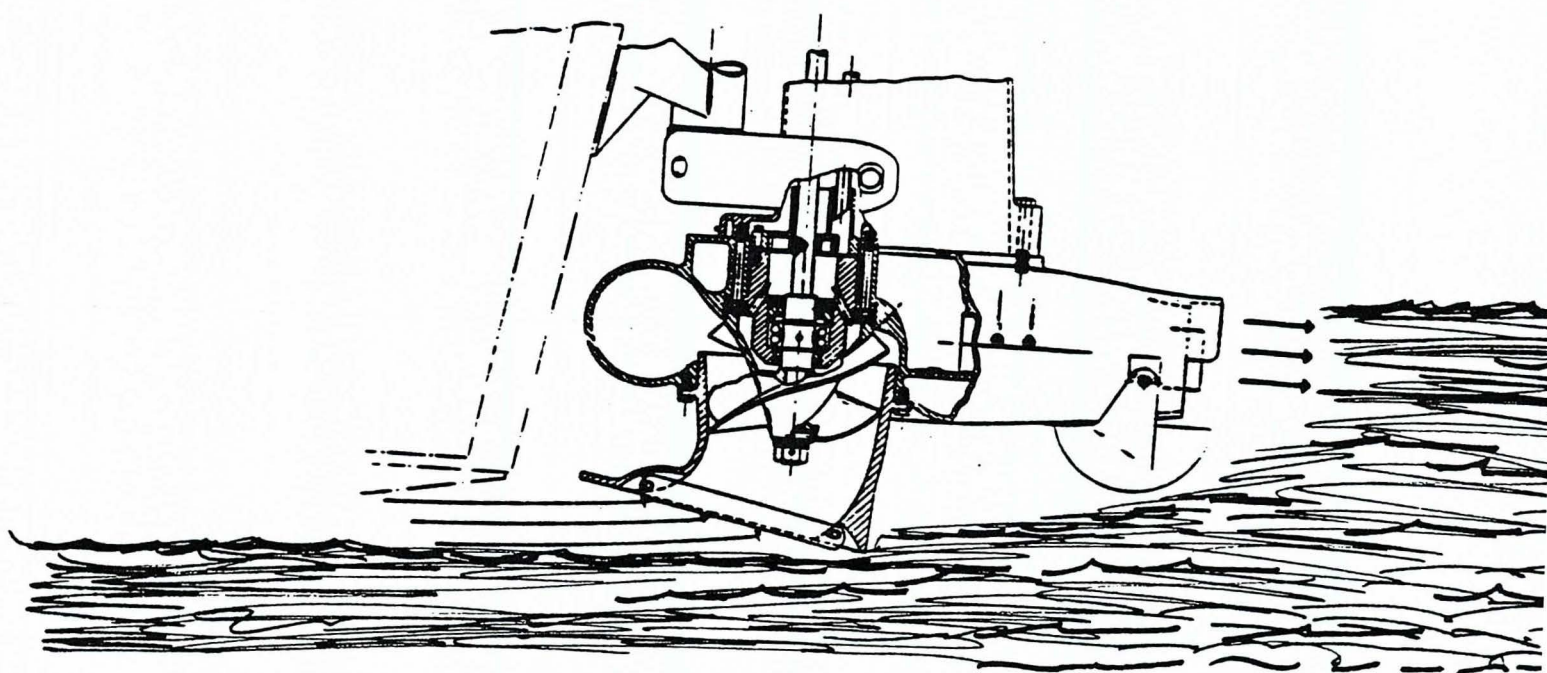
CONVENTIONAL PROP



JET UNIT



## APPENDIX B



## APPENDIX C-1

There were a total of nine deaths that occurred as a result of boating accidents on float streams in 1985.

I. Of the nine deaths:

- A. Seven were the result of the boat capsizing.
- B. One was the result of a man falling overboard.
- C. One was the result of a person being trapped under two boats.

II. Outside factors that contributed to these accidents:

- A. Nine involved strong currents and/or high water conditions.
- B. Eight occurred in the daylight hours. The ninth death occurred at dusk.
- C. Eight occurred between the months of March and June. The ninth death occurred in the last part of July.

III. Other factors:

- A. Seven victims were not wearing any type of P.F.D.
  - a. Of the two victims that were wearing P.F.D.s, both were caught in root wads and held there by the strong current.
- B. Six of the victims were swimmers.
  - a. Three of the victims could not swim.
  - b. Of the three that could not swim, only one was wearing a P.F.D.
- C. Five deaths involved the confirmed use of alcohol.
- D. Four deaths involved boat operators with little or no experience.
- E. Nine deaths involved boat operators with no reported boat operator training.
- F. Three victims were lost due to boat hitting submerged objects.
- G. One of the victims was told by the canoe outfitter not to go on the float trip because of high water and strong current.
- H. Seven of the deaths occurred in canoes with no motors.
  - a. Two deaths occurred in Jon boats with motors on them.
- I. Seven deaths occurred in clear weather, with temperatures between 73 F. and 91 F.
  - a. One death occurred in the rain.
  - b. One death occurred in cloudy weather and 60 F.

IV. Location of Fatalities:

Gasconade River	1	Current River	2
Niangua Creek	1	Jack's Fork River	1
Norfolk River	1	Meramec River	1
Piney River	1	Courtois River	1

## APPENDIX C-2

## COMPARISONS 1985, 1984, 1983

	<u>1985</u>	<u>1984</u>	<u>1983</u>
Boating Accidents	269	231	247
Injuries (Boating Accidents)	127	114	103
Fatalities ( Boating Accidents)	27	10	24
Property Damage From Accidents	\$401,127.00	\$231,789.85	\$326,555.89
Alcohol-Related Accidents	72		
Alcohol-Related Injuries	41		
Alcohol-Related Fatalities	9	6	
B.W.I. Arrests	80	63	22

Statistics on alcohol-related accidents were not kept until mid-year 1984. Missouri does not have a mandatory boat accident reporting requirement; therefore, statistics are incomplete.

\* STATISTICS OBTAINED FROM THE MISSOURI STATE WATER PATROL